

(No Model.)

J. R. MATTHEWS.
AUTOMATIC RAILWAY SWITCH.

No. 442,904.

Patented Dec. 16, 1890.

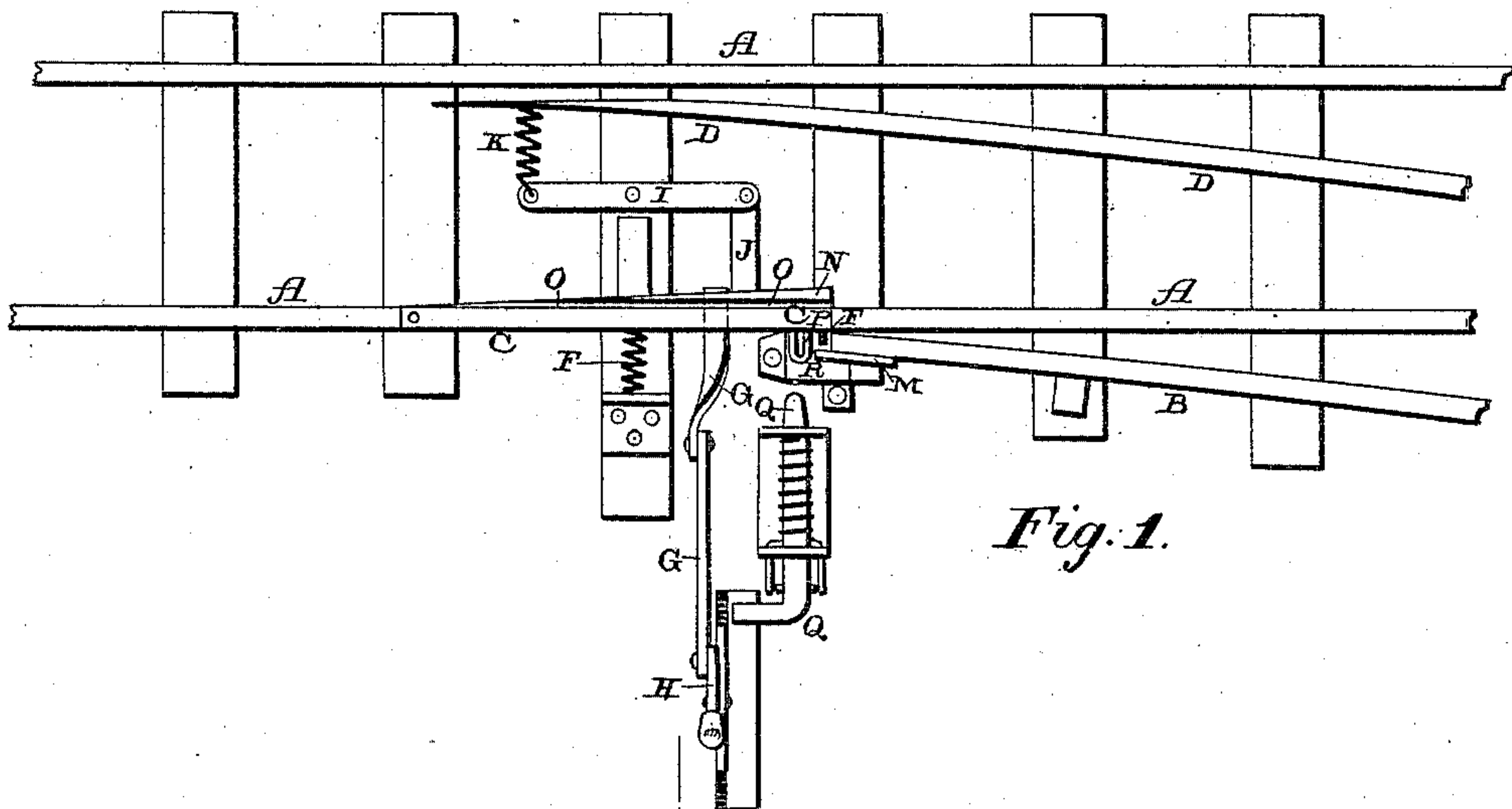


Fig. 1.

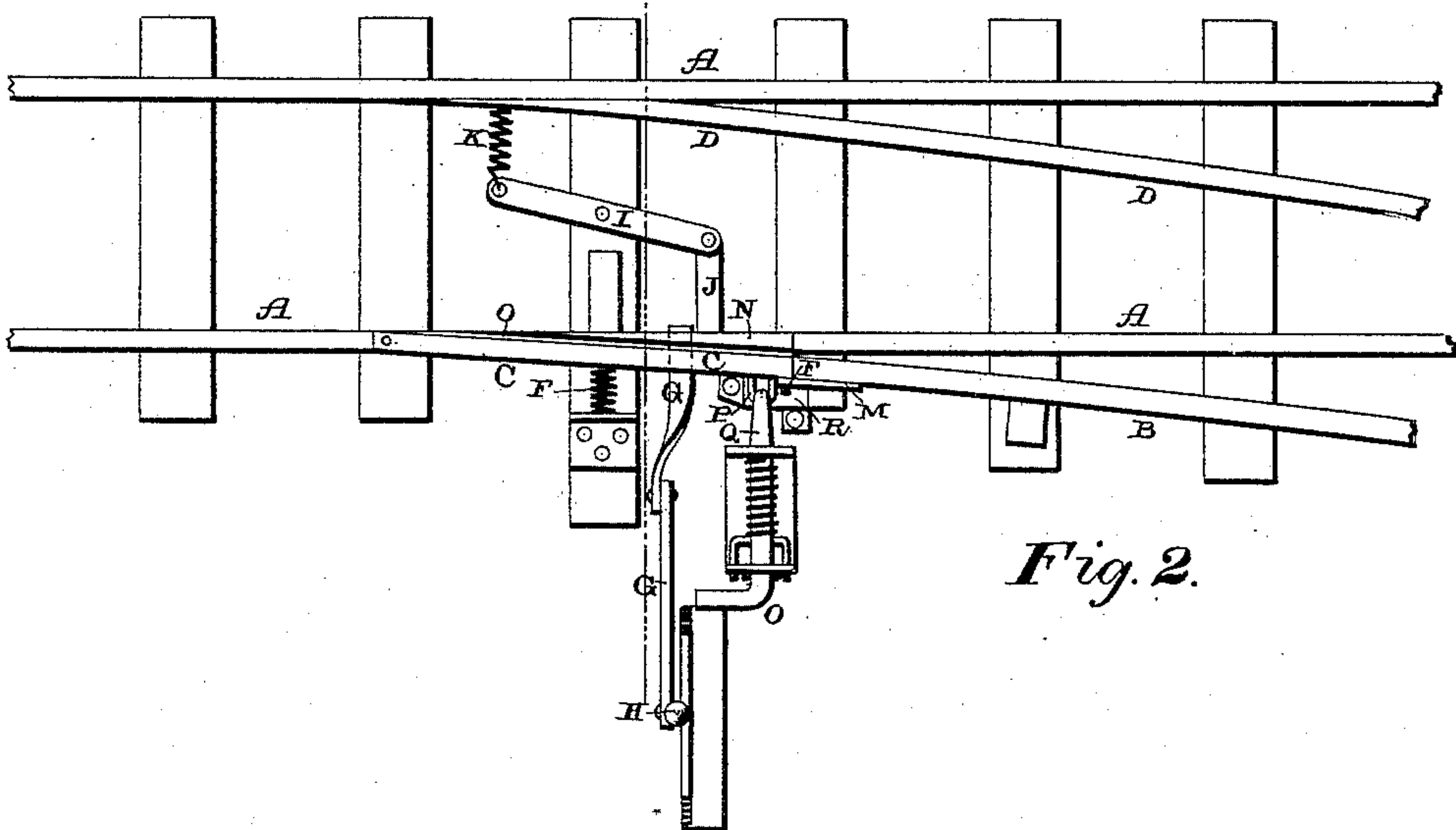


Fig. 2.

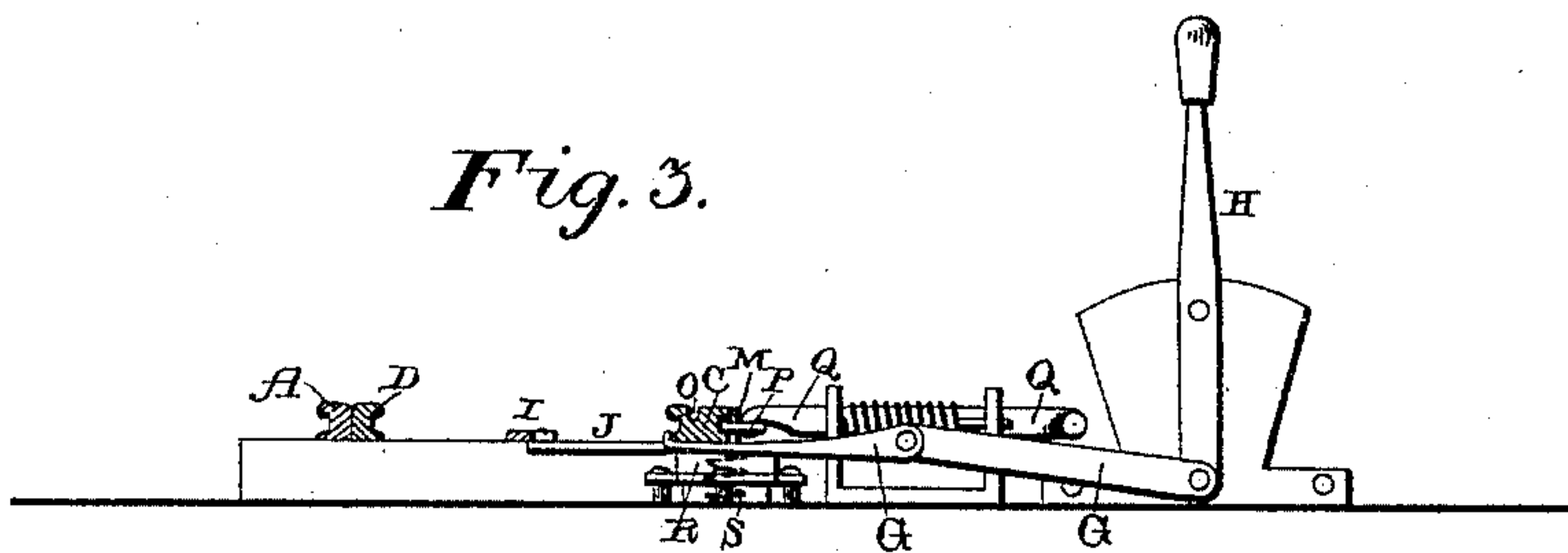


Fig. 3.

Witnesses:

E. P. Ellis,
B. Brackett.

Inventor:

Jos R. Matthews,
per
Lehmann Patterson, attys.

UNITED STATES PATENT OFFICE.

JOSEPH RICARDO MATTHEWS, OF MACON, GEORGIA.

AUTOMATIC RAILWAY-SWITCH.

SPECIFICATION forming part of Letters Patent No. 442,904, dated December 16, 1890.

Application filed September 1, 1890. Serial No. 363,686. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH RICARDO MATTHEWS, of Macon, in the county of Bibb and State of Georgia, have invented certain new and useful Improvements in Automatic Railway-Switches; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in automatic railway-switches; and it consists in the arrangement and combination of devices, which will be more fully described hereinafter, and set forth in the claims.

The object of my invention is to provide an automatic switch which when set will be operated by the weight of the train passing over it, and then snap back into position in connection with the main line.

Figure 1 is a plan view of the switch which embodies my invention, showing the switch in one position. Fig. 2 is a similar view showing the switch in another position. Fig. 3 is a vertical section taken through just to the left of the switch-lever.

A represents the rails of the main track, and B the stationary rail of the side track. Upon one side the main line is disconnected, so as to allow the switch-rail C to be inserted between two of its sections. This switch-rail C operates in connection with the switch-rail D, which is pivoted at one end and beveled away at its opposite end where it comes in contact with the main line, and which rail D forms a portion of the side track.

Applied to the outer side of the switch-rail C is a spring F, by means of which the switch is returned to position when it is left free to move. To this switch-rail is fastened the connecting-rods G, which are fastened at their outer ends to the switch-lever H, by means of which the switch is moved for the purpose of making connection with the side track. To the inner side of the switch-rail is connected the lever I by means of the short connection J, and this lever I is pivoted at its center upon one of the ties, so as to turn upon its pivot with the movement of the switch-rail C. Between the free end of the pivoted lever I

and the beveled end of the switch-rail D is interposed a spiral or any practicable spring K, which serves both to cause the two switch-rails C D to move together and to allow the flanges of the wheels to pass between the rail of the main track and the beveled end of the rail when the train is passing along the main track toward the left. As soon as the train passes by, the spring K instantly returns the beveled end of the rail D to position against the side of the rail.

When the switch-rail C is moved by the lever H, the pivoted lever I and spring K cause the rail D to move correspondingly, and when the rail C is moved back to its normal position by the spring F, so as to make connection with the main line, the beveled end of the rail D is moved out of contact with the side of that main rail against which it was bearing.

The switch-rail D is of ordinary construction; but the switch-rail C is made thicker at one end than the other. This thickness is in the shape of a triangular end, and there is a groove O upon the top of the rail to receive the flange of the train, which is either running upon the main track to the side track or from the side track to the main one. When the switch is made to connect with the side track, this triangular block N forms a straight line with the rail of the main track at the same time that the beveled end of the rail D bears against the inner side of the rail of the track upon the opposite side. If a train should pass along the main track from the right toward the switch, the beveled end of the rail D would be forced back by the pressure of the flange of the wheels against the tension of the spring K, while the wheels upon the opposite side would run upon the triangular portion N of the rail C. If a train is moving along the main line from the left toward the switch when the switch is set to the siding, the wheels upon one side will run upon the rail D, while the wheels upon the other side will run upon the switch-rail C, the flange taking the groove O until they run upon the side track. As the free end of the rail D is moved by the lever I, it will be seen that the rails C and D always move in opposite directions.

The switch-rail C has secured to its outer

side a staple or catch P, which when the switch is set to the siding engages with the endwise-moving spring-actuated rod Q, which when left free to move is forced rearward by its spring. At the same time that the switch-lever II is operated the operator forces forward the rod Q until its hooked inner end catches in the staple P and holds the switch to the siding against the pressure of the spring F. For the purpose of automatically releasing the switch from this spring-rod Q the rail of the side track which abuts against the end of the rail C is supported by a cap or cover R, which is placed upon a suitable spring S, and which cap or cover is prevented from rising beyond a certain point by stops of any suitable kind. The upward pressure of the spring against the cap forces the end of the rail upward a slight distance above the top of the tie. The end of the rail C also rests upon this cap or cover and is given a slight upward movement. The distance that the ends of the two rails shall sink is limited by the tie, which is placed alongside of the cap, but which is somewhat lower. In order that the ends of the two rails shall move alike, the end of the rail C is provided with a stud or projection F', which passes through a plate M, secured to the end of the rail of the side track, and thus the two rails are always made to move together. When a train passes over the switch, whether moving from the main track toward the switch along the main track or from the side track toward the main line, the mere weight of the cars will cause these two movable rails to sink far enough to disengage the staple P from the end of the rod Q, thus leaving the switch-rails C D free to be returned to their normal positions by means of the spring F.

As the distance between the trucks of all cars varies but slightly, the rails C B are allowed a vertical movement along their lengths of a distance more than equal to the distance between the trucks of any car. As the meeting ends of these two rails are locked together against vertical movement, it will be readily seen that, though the catch *a* is disengaged from staple P as soon as the first truck passes on the vertically-moving ends of the rails C D, the switch is still held in this position against the pressure of the spring K until the

whole train has passed. This is true, because there is always at least one truck upon either the rail C or D while the train is passing.

The mere passage of a train over the switch when it is set to the siding serves to shift it to the main line as soon as the weight of the train leaves the switch-rail C. The switchman has only to set the switch for the passing train, and then the train operates the switch so as to return it to its normal position.

Having thus described my invention, I claim—

1. The combination of the rails of the main and side tracks with the switch-rails C D, a pivoted lever placed between them, and a spring for connecting the end of the lever with the rail D, a spring F for opening the switch, and a hand-lever for operating the switch, the free ends of the switch-rails C D being made to move in opposite directions, substantially as shown.

2. The combination of the switch-rail C, having a triangular-shaped block secured to or formed upon one end, the pivoted lever I, spring K, switch-rail D, spring F, and the operating-lever for moving both of the switch-rails with the rails of the main and the side tracks, substantially as described.

3. The combination of the two switch-rails loosely connected together and made to move in opposite directions with the staple or catch, a spring-actuated rod for engaging with the staple or catch, and the spring upon which the movable end of the switch-rail rests, substantially as set forth.

4. The combination of one of the rails of the side track having a rising and falling movement at one end, a connecting-plate, the switch-rail provided with a projection which extends through the connecting-plate, the catch or staple, a spring-actuated rod for catching in the staple or catch, a spring placed under the ends of the two rails, and a lever for moving the two switch-rails, which are loosely connected together, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

JOSEPH RICARDO MATTHEWS.

Witnesses:

GEO. M. HICKMAN,

M. M. MASSEY.